Vol. XXVII, No. 16. July 31, 1930

THE JOURNAL OF PHILOSOPHY

SCIENCE AND LIFE

THE essential question at issue between Professor Herrick and myself[1] is not a new one; briefly, it concerns the relative importance to be assigned to the generic (universal) and the non-generic (particular or individual) factors in the determination of the natural individual. By this term I mean any single particularized entity "given" or otherwise demonstrable as having distinguishable persistence or self-identity in nature. At the one extreme is the electron, at the other the human being. Electrons are "all alike"; human beings are infinitely diverse. Yet a certain exclusive property, uniqueness, or particularity must be recognized as belonging to each individual, of whatever species. In the case of electrons no intrinsic differences, qualitative or quantitative, are evident; the only observable diversity is in external (space-time) relationships; i.e., one individual differs from another in position, velocity, or direction. When we say that all are alike, we mean simply that, so far as experimental evidence goes, any one electron is perfectly substitutable for any other in any relationship. Substitutability of this kind is implied in all the facts of physics; evidently the stable existence and regularity of all large scale natural events are directly bound up with this complete ability of each elementary scientific unit to replace any other of the same kind. This condition is exemplified by all those innumerable stable states, processes, and natural objects which depend for their existence and properties upon a regular flow of material and energy; and these include virtually all radiant, thermal, electrical, and chemical phenomena, and especially life itself. I need not dwell on the fundamental importance of this general feature of physical constitution. It is true that many of the observed uniformities in a process may be statistical and that the individual components vary; but these variants have their own special properties and range of variation which are fixed by underlying invariants; i.e., the variations themselves are based on uniformities. It is significant that the oil-drop method of measuring the individual electronic charge[2] shows no

[1] C. J. Herrick, "The Limitations of Science," this JOURNAL, Vol. XXVI (1929), p. 186. R. S. Lillie, "The Scientific View of Life," *ibid.*, Vol. XXV (1928), p. 589.

[2] R. A. Millikan's method. *Cf.* his book, *The Electron* (University of Chicago Press), for details.

appreciable variation in this ultimate unit. Generally speaking, in science as in mathematics, substitutability is regarded as equivalent to identity; hence science ignores the possibility of individual differences between electrons. Similarly, it sees no need of individualizing many other natural units, systems, and complexes, most of which can be dealt with adequately, from the scientific point of view, by generalized images, schemata, or formulæ.

With human beings the case is different. We have a dependable science of electricity; have we one of human relationships? Such a science is possible, it seems, wherever the individual differences of the human units may be neglected without detriment to the broad facts of the situation; e.g., when men are considered (1) in the mass (statistically), or (2) as equivalents in the biological sense, i.e., as similar with regard to their essential physiological or social functions and requirements. In general, modern equalitarian theory and practice (derived largely from a recognition of these basic similarities) tend to single out and emphasize as chiefly important these characters in respect to which all persons are alike and which for that reason are subject to scientific treatment; nevertheless the inescapable fact of human individuality remains and sets sharp limits to the applications of science in this field. Science is primarily interested in the constant or general; there is little doubt that any existing lack of sympathy between science and humanism is derived from their characteristic differences of emphasis, that of humanism being chiefly upon individuality with its attendants of special inherent quality and value. Complaints of the "tyranny of science"[3] appear, in the last analysis, to have their origin in a conviction, intuitive or reasoned, that the individual, as such, is not the proper subject of science.[4] At the present time, when the spirit of science has invaded most fields of human interest and activity, it is especially important that the nature and appropriate field of scientific method should be clearly understood.

It will probably be agreed that the essential fact of nature, for both science and philosophy, is the union of generic and individual factors in each single natural occurrence or situation. Since Plato this has been recognized as fundamental, although many divergent views have prevailed as to the exact status of the generic in reality. Now the generic is the special field of science; this characterization defines broadly its essential nature and applicability. Science aims at determining and characterizing the gen-

[3] *Cf.* the recent book of J. W. N. Sullivan with this title in the "To-day and To-morrow" series.

[4] This is well recognized in philosophy. To quote from an eminent modern philosopher: "No science, as a science, can deal with individual situations as such." Bosanquet, *Science and Philosophy*, London, 1927, p. 175.

eral or constant (universal) conditions and factors in nature and is concerned with the individual only in so far as it is reducible to, or exemplifies, the general—i.e., is *typical.* The scientific emphasis on quantitative procedure is derived from this peculiarity, since the generic is that which either is repeated (i.e., countable) or presents itself in phenomena as a constant and uniform (i.e., measurable) ingredient. Accordingly, mathematical method applies to generic and not to particular (i.e., unrepeated) characters, and the success of mathematical physics is itself evidence of the degree to which generic conditions and factors pervade the natural world.

With regard to living organisms, we may say briefly that they, like other systems in nature, owe their stability or persistence to the generic factors in their constitution. Organic survival presupposes a permanent adjustment, involving a regular correspondence or interplay between the constant features of the organism and those of the environment.[5] We realize this perhaps most clearly when we consider the case of a man who is confronted with any immediate occurrence or situation which discloses no generic features; he is unable to adjust himself to it—unless by good luck. The biological function of knowledge is sufficiently indicated by this illustration. By its very nature knowledge, considered as a means of adjustment, is directed to the *generic,* i.e., the stable, repeated or dependable features of the environment; correspondingly it requires or presupposes the presence of correlative generic characters and aptitudes in the living organism if the conditions of adjustment are to be met. Such considerations show sufficiently that organic survival depends upon the generic characters of both organism and environment, i.e., upon those characters which are scientifically definable. We observe that living organisms thrive and multiply, and we may conclude that their precise and far-reaching scientific characterization is possible, at least with respect to those features which determine survival. These features—metabolism, growth, reproduction, responsiveness—constitute their essential distinguishing characteristics.

In my address I drew the appropriate moral from these considerations. Since any single natural occurrence or particular, whether living or non-living, exhibits generic, i.e., scientifically definable, aspects, we conclude that living organisms, equally with non-living natural systems, are subject—to that degree—to the methods of science. In other words, science is applicable to living beings in so far as generic features, aspects, or qualities enter into

[5] I have considered this feature of living organisms (usually indicated by the term adaptation) in more detail in an earlier paper in this JOURNAL, Vol. XII (1915), p. 589.

their composition. Whatever is constant (or regularly repeated) [6] is scientifically definable, i.e., may be mentally represented or conceptualized in definite terms, even though we may be far from "knowing" what the thing is intrinsically and can do no more than use some conventional symbol (usually derived from some constant feature of its manifestation or from measurement) as its mental index (concept) or representative. Constancy, then, may be regarded as the criterion of scientific determinability. The very complexity of living organisms, combined as it is with their observed stability in nature, is itself clear evidence that the vital processes have throughout their entire range their own characteristic constants, i.e., their regularly repeated and law-abiding features; accordingly, we must regard these processes as scientifically determinable, even in their minutest detail. The achievements of biological science justify this view, and we may look forward with confidence to an indefinite increase in our biological knowledge and control.

Having emphasized this, I felt bound also to point out the limitations of the scientific procedure as applied to life and its various manifestations. Even after the fullest possible characterization of any single natural phenomenon in generic terms has been made, there always "remains over" a certain residue of particularity not covered by formulation. This residue is small in some instances, large in others (certain things "baffle description"), and constitutes a mark of the special uniqueness or individuality of the phenomenon in question. Now what seems peculiarly characteristic of living beings, becoming more and more conspicuous as we ascend the organic scale, is just this peculiar element of exclusive particularity, uniqueness, or *individuality*. Briefly, individualization appears as the most significant outcome of the vital evolution, especially in its higher manifestations among animals, reaching its chief development and enhancement in man. In so far as the human being is unique, non-generic ("in a class by himself"), just so far does he evade scientific characterization. His generic characters then cease to have special significance or interest; we take them for granted; we consider him primarily as an individual and disregard his class characteristics.

Similarly, the determination of a large part of such a man's actions becomes non-generic; i.e., such actions are "free" in perhaps the only sense in which that much-abused word has any mean-

[6] Repetition may be regarded as coming under the general head of constancy, i.e., as *intermittent* constancy. Uniformity of temporal repetition, or rhythm, i.e., a regular periodicity of action or manifestation, appears to be an essential character of the fundamental natural units, as indicated especially by the recent work in physics on interference phenomena in electrons and protons.

ing. My brief allusion to the problem of freedom [7] was not irrelevant; the conception of determinism in human conduct is scientifically derived, and it is important to recognize that the limits of definiteness in the scientific characterization of the individual have their counterpart in the limits of definiteness in the causal determination of individual actions. The difference between action and static constitution is obliterated in modern physics. The very particularity of an action implies the existence of a residue of non-generic determination; and apparently we have here a significant correspondence with our intuition of freedom or self-determination in conscious voluntary action. According to this view, *will* is the expression of the individual factor in action. The recognition that individual as well as generic factors enter in the determination of each voluntary action would seem to be the key to the problem of determinism in human conduct.[8] I.e., freedom is possible to the degree in which a man expresses himself as an individual, and not as a mechanically acting or stereotyped class unit. Any denial of individuality thus corresponds to a denial of freedom; and this is a matter of present practical importance, for just such a denial seems to be encouraged by the modern insistence upon the all-importance of generic factors in human life and behavior. Such insistence readily leads to the fallacious assumption that the generic aspects of a situation or action are the only ones worth considering, or having "true reality," A sign of the times is the erection of behaviorism (in certain quarters) from a department of experimental psychology—having the wholly legitimate aim of determining the physiological constants of animal behavior—into a philosophy of life. Scientifically educated persons are apt to doubt whether a human being, with all his elaborate and embarrassing equipment of generic structures, physiological processes, and propensities, can have any significant individuality or freedom whatever. The force of such doctrinaire reasoning is usually weakened by a sufficient range of experience, and skepticism of this kind appears to be declining among well-informed persons. For the present it may be sufficient to point to the unique or private status of each human consciousness, a centre of experience from which the rest of the world is seen in spatio-temporal perspective, as furnishing perhaps the clearest testimony to the fundamental significance of individualization in the natural process. In order to account for this feature of experience—apparently the index of some innate isolationist or

[7] *Loc. cit.*, p. 606.

[8] In voluntary action the generic factors (e.g., physiological conditions such as hormone deficiency, etc.) would on this view be regarded as *restrictions* —in much the same sense as the physical laws of energy are restrictions—rather than as ultimate determinants.

centralizing tendency in reality—some kind of monadic theory seems required, but fuller consideration of this topic must be deferred.

On the view represented by Professor Herrick, science involves (1) accepting experience and (2) determining the relations between the various facts of experience. It does not attempt to account for experience or to define the intrinsic nature of reality—does not need to do so; accordingly, it is delimited sharply from philosophy. He raises an interesting question when he maintains that empirically the thing *is* its relations, and that science is primarily and essentially a determination of relations.[9] Undoubtedly the relational side of scientific description forms a large part of it, especially in the exact sciences; but even here the given or *immediate* experience of the single case, including its qualitative or affective side, is typically reflected or indicated in the scientific representation, although in a partial and generalized form. Can we say, for example, that the descriptive side of biology or chemistry is solely a specification of relations? A rose may be scientifically described as a red flower with a characteristic and delightful fragrance; or chlorine as a yellowish-green gas of evil odor. There is nothing unscientific about such descriptions; they correspond to fact, and they show clearly that a thing is specified scientifically by its constant or verifiable characters, whether these are relations *or* sensory, even esthetic qualities. Nevertheless, it remains true that in many cases the scientific conceptualization is best accomplished by regarding the complex natural fact as constituted by a synthesis of simpler uniform elements having definite relationships. The relations (including constant modes of interaction) between these elements are then defined in precise terms and are regarded as constitutive of the whole scientific object with its definite properties. The elements themselves, being individually equivalent (e.g., atoms, electrons, units of energy), can be symbolized by numbers (designating mass, charge, potential, etc.); i.e., their qualitative aspects can be provisionally disregarded, and the relational side then assumes the foremost place in the description. This is especially true when space-time relations (dimensions, position, velocity, vector characters) are the chief subject of interest. Mathematics applies wherever the elements and relations are conceived as homogeneous and freely substitutable, and especially wherever the results of synthesis are additive rather than emergent. When the essential results are *emergent*, as (e.g.), in the synthesis of chemical compounds or the development of living organisms, a special characterization must be made for each emergent, based on its experiential quality. This

[9] *Loc. cit.*, p. 187.

last consideration explains why biological concepts are so largely non-quantitative; this is an unavoidable feature of biological science and in no sense a defect.

Verification, a constant feature of the experimental method in science, is simply a determination, by repeated trial, of the constant or dependable characters of phenomena, i.e., those characters which are always present or which recur regularly. We are thus brought back to the determination of constancies, and their characterization in definite and intelligible terms, as the essential feature of scientific procedure. Since the generic—the aim of scientific determination as such—is by definition that which is common to the various otherwise individualized members of a group (their constant feature or component), it is evident that its existence and character can be determined only by repeated observation.

If, then, the regularity of an experience is that which qualifies it as a subject for science, we may regard any experience which is repeated and is common to a large number of persons as possible (even if sometimes not fit) material for scientific characterization. Conceivably, as Professor Herrick points out, the psychologist may be interested in the subject of filial piety; but it is just here, I should contend—while agreeing that filial piety has constant (or scientific) characters which are relatable to antecedent, consequent, and other conditions—that the limitations of scientific treatment show themselves most clearly. What is *generic* in filial piety, or in personal love, is of small interest or importance compared with what is *individual*. This consideration indicates rather clearly the inadequacy or (in many cases) fallacy of the Freudian methods of psychological analysis, and in fact the limits which must be assigned to psychology as a *science*. That which is unalterably and peculiarly individual can not be subsumed under generic rule. If we attempt to do so, we miss its peculiar reality and significance. For example, I (personally) may be only moderately interested in the generic features of Bach's D-Sharp minor fugue;[10] no doubt such features exist and have their technical importance; but what is essential to this composition is its unique and perfect *individuality*. It is quite true that this individuality would not be what it is—in fact could not have come into existence—apart from the supporting or conditioning universals of the science of musical composition; but of course this is the very reason why I have chosen a work of art as an illustration. In the best art the generic and the individual factors are present in a peculiarly intimate interfusion; while the individual character is just that which is acknowledged to be of chief importance and inexplicable by reference to the generic.

[10] No. 8 of the second book of the Well-tempered Clavier.

The question whether there can be such a thing as a scientific history or a scientific biography is closely related. Is a science of unrepeated events possible? Is not such a conception a contradiction in terms? Clearly we can not make a generic proposition out of an individual occurrence. In a recent scientific discussion on the application of thermodynamics to life phenomena, Professor Donnan refers to the "theory of individual action,"[11] but it is difficult to see how there can be such a *theory,* since theory in its very nature is generic—a frame into which the individual occurrences or particulars are fitted. The virtue of a valid theory, e.g., the theory of gravitation, is that it applies to an indefinite number of special instances. Science indeed may be defined as the theory of *generic* action—i.e., when it is not the theory of generic form, order, or structure. Science, however, is not to be identified with logic. It may be that mathematicians tend (professionally) to disregard individuality; and natural science, which is largely patterned after mathematics and aims at conforming to mathematical canons, shows the same tendency. We may agree that the *order* of nature is its proper field, i.e., the determination of natural laws. But nature, although dependent on a background or substratum of order for its existence and evolution, can not as a whole be described as orderly and nothing else. It exhibits also an arbitrary character, not only in its entirety, but even in its detail. This means that science, taken alone, can not account for the particularity of natural events.[12] Nevertheless, its field, in identifying and formulating the orderly elements in natural occurrence, is a sufficiently wide one; and to regard any limitation of its applicability as a disparagement, as apparently is done by some of its votaries, is to misconceive both its nature and its essential value. Since science deals with universals, it is only to be expected that its range of application should be universal. But this very characteristic, which constitutes its essential strength, disqualifies it for dealing completely with the individual. In so far as an individual is a composite of universals, science may be said to apply; but what remains over, i.e., the element of individual uniqueness, inevitably escapes its grasp.

As Professor Herrick indicates, the problem of the ultimate factors in the determination of the individual is a metaphysical rather than a scientific one. I should urge, however, as an amendment, that science, being the field of the generic (an ingredient in every particular), must contribute its share to the solution of the problem. Modern philosophers from Leibniz and Berkeley to Professor Whitehead have regarded God as the final ground of deter-

[11] F. G. Donnan: *Journal of General Physiology,* Vol. VIII (1926), p. 685.

[12] I.e., the particular in nature can not, *qua* particular, be deduced from the general.

mination—i.e., as that which is responsible for the actuality, as distinguished from the abstract possibility, of natural existence. The concept of God is inherently vague, and for this reason and also because of certain associations appears unacceptable to many scientific minds. This, however, is immaterial; what is essential in any such view is that it regards the ground or agency of final determination as primarily self-determining, and as unitary rather than pluralistic, the basis for the latter preference being a recognition that order (a fact in the universe) implies coherence and coherence unity.

I have been called to task by scientific friends for the assertion that there is an arbitrary element[13] in even the least detail of nature,[14] and I may close with a brief indication of what I believe to be the scientific justification for this position. First, we may refer the arbitrary character of a single ultimate physical event, such as a quantum leap, to the arbitrary character of the whole universe of which the single event is a part, on the general ground that the coherence of the cosmic system implies the determination of each part, to some degree, by the character of the totality. But this totality is arbitrary, since there is (by definition) nothing outside of itself to determine its special character. Or, second, we may disregard the whole, and confine our attention to the single quantum event, having regard to Heisenberg's principle of indeterminacy, now regarded as scientifically well established. According to this principle an element of indetermination *and* one of determination (viz., the condition of constancy represented by Planck's constant h) are both present in each such event. The prediction as to the time and direction of the individual leap is a matter of probability, i.e., no fixed and complete determination can be assigned to the single event. Yet with large numbers of similar events the determinate character emerges into prominence, and the observed regularity of large-scale physical action depends upon this. This regularity shows that, as regards the individual leap, *some* element of determination is present, otherwise the summation would not give determination. When the numbers are large, as in the physical action of our ordinary experience, the purely random, indeterminate or arbitrary elements compensate one another statistically, and the determinate element remains as a directive or controlling factor in the total situation.[15] The arbitrary elements are, however, present

[13] I.e., one not to be accounted for on general grounds.

[14] *Loc. cit.*, p. 601.

[15] "Indeterminate," in the physical or operational sense, means simply independent of outside influence—hence experimentally uncontrollable. This, at present, appears to be the case with each single electron event, although it is possible that future experiment may change the situation. There is, however,

as part of the inner detail[16]

Experimental physics indicates that this type of determination is a universal feature in natural occurrence. The constant condition (or set of conditions) is always present as a necessary factor in each single occurrence; also the non-constant or individual characteristic (or set of characteristics) which determines the special or unique particularity of the occurrence. The quantum case is one of special philosophical interest, both because it is basic to physical action in general, and because in it the two factors of generic and of individual determination appear side by side in sharp contrast to each other, yet inseparable.

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IN DEFENSE OF ABSOLUTE ETHICS

EXPERIENCE of values differs from experience of phenomena. This is not to posit two kinds of experience, but rather to admit two ways of interpreting experience, in terms of cognition or in terms of purpose. Through observation and induction it has been possible to build up and organize the physical sciences, and although the highest achievements of scientific investigation purport to be no more than working hypotheses, yet the structural method of *if, then* is not liable to attack. It is, as Kant demonstrated, the essential method of reason in dealing with the objective data of sense experience. But *if, then* knows no preferences, whereas actual experience yields grounds for the expression of preferences no less than for the organization of facts. Thus Kant discovered the inherent operation of the regulative category of moral experience.

The study of history shows that in the development of civilization man has been more concerned with the proper use of the regulative than with that of the formative principle. Prior to the modern era, he has evaluated facts more carefully than he has defined them. His attitude toward science has been suspicious, even hostile because, on its own testimony, it eliminates values, and when you have taken away my gods, what have I left? From the point of view of moral

nothing physically inconsistent in assuming the presence of internal or individual factors, not accessible from without, in each centre of activity. E.g., the very large and as yet experimentally inviolate internal energy of the atom remains to be accounted for. If such factors were to operate physically, it would be in a manner that to an external observer would appear as arbitrary.

[16] For the special case of vital action, as exhibited (e.g.) in voluntary behavior, I have attempted to show how this small-scale arbitrary character may express itself, by transmission associated with amplification, on the large scale of the whole organism (*Science*, 1927, Vol. LXVI, p. 139).

consciousness, it is not necessary that science should substitute evil for good in order to be dangerous; the mere elimination of values gives a partial and therefore false interpretation of experience. Science is by definition abstract. Morality is concerned with the totality of experience. Only after having satisfied itself that the partial knowledge of science is integral to the whole of truth can moral consciousness admit the necessity for science. In its procedure science leaves values out of account, but eventually its own aims, method, and achievements are evaluated.

Although attempted solutions to the problems of ethics are historically prior to the efforts to solve the problems of pure science, logically the ethical interpretation of life is the more complex and subsumes the other, simpler interpretation. The strenuous efforts which from time to time have been made to subject ethics to scientific discipline can not be cited to the contrary, for the ethical-scientist undertakes to justify his method as *a better way*. It is true that the attempt to adopt the scientific attitude in the study of ethics has rendered invaluable service in diminishing man's self-importance. Uncriticized by science, the natural desire to achieve purpose degenerates into a tendency to ascribe purpose. Instead of affirming as we can and should that our world can be adapted to our ends, we are all too prone to assume that it was created for our use. To this extent the influence of science upon ethics has a salutary effect, but further subjection of ethics to science denatures ethics. Knowledge about values and theories of value may supplant, but do not replace, value judgment. Although man can no longer regard himself as standing proudly in the center of the physical universe—such an assumption were as ridiculous to-day as the theories of alchemy and Black Magic—yet the ethical point of view is necessarily anthropocentric. Every finding of science is eventually humanized, every problem estimated in its relation to man, for man is his own point of reference. His last question always remains, "What does this mean to me?" or, "How will this affect my life?" Science follows through the correlation of experience implicit in experience as given, but ethics selects its own correlation, seeks "a more excellent way." A scientific study can be made of the moral conduct of human beings, future tendencies may be scientifically inferred, but it is beyond the reach of science to originate moral progress. Since science studies all life, it studies the phenomena of the good life, but it is more than science if it undertakes to make life good.

Civilization is the manifest proof of humanity's ceaseless effort to make life good. This is not necessarily to say that history is the record of "one increasing purpose." Although some who have studied the past affirm such a revelation, others find futility and

chaos. Yet it is always the chaos of cross purposes, the futility of any force operating against an equal and opposite force. No one can deny the genuineness of the struggle. Even granting the hypothesis that life *in itself* may be neutral and valueless, if man does not truly discover value in life, he immediately imputes it. He is not content to adapt himself to the existing scheme of things but undertakes to "mold it nearer to the heart's desire."

Essentially the heart desires the ultimate and unchanging, but every effort towards realization must take definite place in time and suffer the dissolution of all finite objects. Customs, creeds, laws, and institutions have their exits and their entrances; they serve in turn to objectify moral purpose. The length of their duration is proportionate to human interest which they serve. All are relative to human life and at utmost coterminous with it. Perhaps it is here that the pure scientist finds the grounds for that superiority which he sometimes affirms for science above ethics. Granted that his findings become part of the wealth of human experience and as such must take their place in the system of values, nevertheless the truth of his findings, as pure truth, is not subject to human evaluation. As pure truth it transcends all finite limitations including those of human life. In pure truth the scientist finds an Absolute, and in the certainty of this Absolute he can regard with equanimity the possible disintegration of our entire solar system. There is that in his attitude which recalls the earlier theologians, "willing to be damned for the glory of God."

Since ethics is coterminous with human life, it appears at first to be impossible to establish it upon such an absolute basis. If human life should disappear, would not values disappear with it? Unless, if values be eternal, humanity is immortal. Faith in this second proposition has, in past ages, given rise to various theories of transcendental idealism. These theories have afforded tremendous satisfaction; they have provided man with that hope of ultimate achievement without which life were unbearable. Nevertheless, usually they are subject to censure as being no more than wistful speculations, creations of fancy. Instead of releasing the quality of goodness, toward which humanity strives, from the spatial and temporal limitations of experience, these theories tend to translate human experience into another world which differs from the physical in degree only, not in kind. How prone is human thought to insist upon existence as a condition of perfection is indicated in the prestige long enjoyed by Anselm's familiar proof of the existence of God.

It would seem that the founder of Christianity made an attempt to assert the pure quality of goodness when he said, "The Kingdom of Heaven is within you." But he said also "In my Father's

House are many mansions,'' which, according to orthodox interpretation, means that the heavenly kingdom is not only a spiritual state, but an actual realm. The subtle schoolman could distinguish between *sub*sistent and *ex*istent, but to the average man, *to be* is to be somewhere at some time or for all time. He insists upon putting his feet upon solid earth, or upon more solid golden streets. The metaphorical descriptions of heaven are regarded as metaphors not because they symbolize in sensible terms spiritual experience which has no sensible quality (somewhat as a flag symbolizes a nation) but because they are inadequate to the description of heaven. The difference between this world and the next is understood as a difference of degree rather than in kind. The ''spiritual body'' of which St. Paul wrote would presumably enjoy ''spiritual'' sensation.

The doctrines of the Christian Church as defined in the Middle Ages set forth a complete cosmography of the World to Come. As there is a Heavenly Kingdom for the blessed, so too there must be an appointed place for the wicked. Although neither the Gospels nor the Epistles give any explicit description of hell, by logical implication hell must be, and must be the very opposite of Heaven. If a man had merited divine grace he would ascend into Heaven, or if he had died in his sins he would descend into hell. Thus some would be damned, but none were lost. Whatever a man's ultimate fate might be, he kept his soul's integrity, his self-importance. And this self-importance is essential to moral development.

The broad sweep of modern science has banished Heaven and hell from the intellectual cosmos. No one is damned, but all are lost. If the whole solar system be but a vague bit of mist in the milky way, can human action have sufficient relative importance to weigh in any balance? What is the cosmic significance of a murder committed in Perry, Florida? Why strive to make life good since it is impossible to make it anything at all? Indeed, is not *good* an empty phrase? Or if it have any meaning, is not the only possible good to avoid the vanity of self-delusion, the futile pursuit of moral perfection?

It were unwarranted to say that any scientist intends that such implications should be drawn, but it were idle to deny that they have been drawn, and that the findings of science have provided their ground. Unintentionally it may be, but undeniably science has precipitated a moral problem of such magnitude that our future progress depends upon the way in which we meet it. We can not continue to ignore it. Already we are painfully conscious of moral degeneracy in the world around us, especially among the youth. Yet when we are called upon to help them establish an ultimate principle of righteousness are we not often chagrined to find how uncertain and inadequate a foundation we have for our moral

code? What answer can we give to the question, "What difference will it make in a thousand years?"

Inevitably the human relation brings scientific knowledge into the sphere of ethics. A twofold theory of truth is a poor makeshift; the effort to reconcile truth and goodness must ultimately be made. Man may learn to study the universe without seeking to evaluate it, but his specific problem as a human being remains a problem of value, and since he is his own point of reference, the core of the problem is the question of his own worth.

But is it true that the admitted cosmic insignificance of human life undermines the principle of morality, or, paradoxical as it may seem, does the discovery that physical man is relatively indiscernible in the infinite physical universe lead us to posit the absolute quality of morality? Does it not lead us to a better understanding of Spinoza's phrase, "*sub specie æternitatis*," so that we fully appreciate it as meaning out of time, not from everlasting to everlasting. If there be goodness, it must be in its own right, pure quality. Values have reference to phenomena, or properly, values are the meanings of phenomena, but values as such do not exist in space and time. It is not hard to accept the statement that values are not extended, but it is more difficult to admit that they have no duration. We laugh at the question, "How large is virtue?" but when asked, "How long will it last?" we piously reply, "Forever."

Yet if space and time are dimensions of the physical world, one question is as absurd as the other. We know that goodness is "imponderable." Can we not understand that it is not durable? Suppose I should kill my neighbor, and immediately afterwards some natural cataclysm wiped out the whole human race. Were it then true that my act "made no difference," or according to the absolute, timeless criterion of values, would I have sinned irrevocably? Does the fact of escaping punishment have any bearing upon the quality of the deed? Were there no consequences of my act, would the act be therefore of no importance? The hypothetical case is fetched so far that it borders on the absurd, but unless we push the question to its extremity, so that it appears in pure timelessness, are we sure to grasp its significance?

Kant connected the regulative principle of the moral law with a hypothetical Kingdom of Ends, thus rationalizing orthodox piety and saving Heaven for faith. But is such procedure necessary? Must pure goodness, the spiritual value of life, be everlastingly contingent? Does even the preservation of Christianity—and as our western civilization is predominantly Christian, our customary ethics basically Christian ethics, the advancement of Christianity is of primary importance to western thought—involve a literal acceptance of an "After World?" Or is it possible to maintain the spirit of

Christianity without ignoring or futilely gainsaying the discoveries of science which necessitate a change of emphasis, perhaps even of interpretation? "For the truth of our faith becomes a matter of ridicule among the infidels," said Thomas Aquinas, "if any Catholic, not gifted with the necessary scientific learning, presents as dogma what scientific scrutiny shows to be false." (De potentia 4, I—as quoted in Michel's translation of Grabmann's *Thomas Aquinas*, p. 37.)

Whatever scientific scrutiny may be able to do in reducing to ridicule belief in an actual heavenly place where the good are rewarded, it can not affect that "Kingdom of Heaven" which is "within you." If we accept the doctrine of Absolute Goodness as Absolute Character we have found an adequate ground for righteousness, in itself. Then the life span of an individual, indeed, of the whole human race, is quite beside the point. Not that absolute goodness exists apart from human conduct, because its only existence is in and through human conduct, but that as value Goodness is not commensurable with space and time. Thus with respect to their value human acts are independent of space and time.

Science makes no apology for truth; neither need ethics defend goodness. Every phenomenon is what it is and contributes its bit of evidence as to the nature of the whole. So, too, every purposeful act displays meaning. Like the data of science, the data of ethics are what they are, and are relative to the unifying principle of the whole. But whereas the method of science, searching for truth, must be the method of disinterested discovery, the method of ethics, acting towards perfection, must be an interested effort towards value.

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A REVIEW OF CURRENT SOCIAL PSYCHOLOGY

THE Editor has asked me to attempt a description of "what social psychology ought to be in the light of what it is."[1]

No one who is watching the progress of experimental psychology can fail to notice the extraordinary increase in the number of experimental researches upon social behavior. Part of this is the natural growth of that experimental social psychology which began with German and American educators early in the present century and has received able and enthusiastic support from such men as

[1] This he thought might be done in the form of a review of a certain recent text-book in social psychology. As soon as I explained where this would lead, we both thought it fairer that I should attempt a direct answer to the Editor's question, without singling out one text-book for what might be considered unnecessarily unfriendly treatment.

F. H. Allport, H. T. Moore, and G. B. Watson; a month-by-month perusal of the *Psychological Abstracts* shows that the titles listed under "Social Functions of the Individual" include more and more experimental studies. However, more than half of the experimental social psychology of today is investigation into the social behavior of *children*—investigation which for the most part has little by way of "experimental psychology" as forerunner, but derives mainly from the recent rapid development of systematic child psychology in response to a burning social and educational need.

The quantity of research which may fairly be called experimental social psychology is roughly indicated by the fact that the writer finds about twenty such titles appearing each month; and is bewildered by the mass of unpublished studies (for the most part studies now in progress) of which he hears through various channels. One may say that very roughly 60 per cent. of this work is American, 25 per cent. German and Austrian, and about 10 per cent. Russian; one of the spectacular events in contemporary psychology is the rapid increase in both quantity and quality of Russian research in both social and educational psychology. (British and Italian psychologists are on the whole uninterested, while French and Swiss work is chiefly limited to the linguistic field.) In short, experimental method has made amazing advances in social psychology, especially in America, though if one judged "social psychology" by its text-books one would scarcely suspect the fact.

The number of pieces of experimental work now available (for the most part in the periodical literature) is somewhere between 1,000 and 2,000. The figure to be chosen depends first on the precise definition of the term "experimental"; it depends secondly on what quality the work must achieve in order to merit inclusion. But taking the lower limit as around 1,000, and noting that this material ranges all the way from the experimental study of the "despotism" of a 15-months-old child over one three months his junior to the experimental comparison of "group thinking" and "individual thinking," and all the way from the measurement of the influence of competition upon the behavior of schoolboys to the quantitative analysis of special appeals in a political campaign, one is a bit puzzled at the Table of Contents of most of the books labelled *Social Psychology* which continue to pour forth from the press. Not only experimental work, but also careful "observational" studies are usually neglected. Good old friends like "Mobs" and "Crowds" still stare forth at us; in fact they receive elaborate explanation (as far as the writer knows, only one careful observational study of a mob or crowd has ever been made, and it is rarely quoted). Headings on "Propaganda" and "Public Opinion" are prominent (a very few careful studies exist here, but they could

be adequately dealt with in five pages). The dear old "Instincts" and "Reflexes" never fail of their space (though one could safely wager a fortune that the author knows and cares little about the intricate biological data on these points; the approach will be a "critical" and "sound" exposition of the problem, without embarrassment from complicated experimental evidence). Very simply, then, the periodical literature is full of a new kind of social psychology, while the *books* on social psychology (several each year) go on telling the old tale.

The development of experimental social psychology has come so fast that there is no place for it in Departments of Psychology as at present organized, while at the same time enlightened students are wearied with an arm-chair social psychology which they have intelligence enough to recognize as a very primitive and amateurish social philosophy. Of course, all the social sciences are undergoing more or less upheaval as a result of the great emphasis upon inductive method, and the consequent disruption of "systems" which are rendered either obsolete or at least uninteresting. The development in sociology is so rapid that it is hard to tell whether a "Department of Sociology" in a great university can simultaneously serve the two functions of doing exact social research and integrating the social sciences after the manner of social philosophy. Now social psychology is in a similar dilemma. Can it play the game of exact research and at the same time serve as an integrating or interpreting discipline within the cultural sciences? I suspect not. The business of organizing and interpreting the complex phenomena of the cultural sciences is scarcely the domain of the psychologist. It is a business which very much needs to be done, but it needs to be done not by proponents of a special viewpoint—economists, human geographers, or psychologists—but by men thoroughly at home in several social sciences, e.g., anthropology, economics, ethics, and who have in addition historical perspective and philosophical acumen.

Yet, though few individuals are qualified to do this sort of synthetic work, there is nevertheless a pressing need for interpretative books in social psychology, and when their authors have taken the trouble to acquaint themselves with contemporary research, they are of immense value. But these interpretative books do not, as a rule, bear the title *Social Psychology*. In fact, they bear titles which most readers would never associate with social psychology at all. One of the chief purposes of this article is to call attention to them and their significance for the social psychologist. A book, for example, like Thomas and Thomas' *The Child in America* appears, in the light of all this, to be a great deal more than its title will suggest to most philosophical readers. It combines, with extraordinary facility, copious references to the best recent research on the social

behavior of children with a critical and frequently profound appreciation of the rôle which child psychology is playing in the reconstruction of the social sciences. One of the authors has long been known as a sociologist; the other turned from sociological statistics to the task of refining the methods of what she prefers to call "experimental sociology." The book shows, to be sure, a little dogmatism and over-simplification here and there. The fact remains that the authors have written both a competent and a fascinating book. But more than that, they are pointing the way towards a social psychology which will found itself upon genuinely scientific research, and at the same time so ally itself to the other social sciences that it will be of some real use to the social philosopher. The fulfilment of either of these tasks alone would make the book well worth reading. A book like this evidently means far more to the development of a scientific social psychology than most of the books which the reader will find listed in the catalogue of any great library under the "social psychology" heading. The same is true of Charlotte Bühler's remarkable *Soziologische und Psychologische Studien über das erste Lebensjahr,* Rice's brilliant application of statistical methods to political psychology in his *Quantitative Methods in Politics,* and Lorimer's scholarly and profound survey of modern research on the acquisition of language as a means to systematic study of the rôle of speech in thought and in social behavior (*The Growth of Reason*).

Books like these show that the collecting of facts need not be tedious in social psychology any more than in astronomy, and suggest perhaps that systematic theories as to human nature may profit as much from a sound factual foundation as do theories as to spiral nebulæ. Reworking the old concepts till they are worse than threadbare is, of course, an easier procedure, and it is quite useless to hope that the inductive trend in social psychology will show itself in the text-books until the weary student, discovering what he is missing, formulates his demand.

It will probably be several years before the authors of text-books fully awaken to the uneasiness which students, as a matter of fact, are already betraying; and they may be able for a while longer to resist the trend towards a social psychology based upon the available research findings. But the forces which are already at work in the re-making of the science will go out into the highways and byways and compel them to come in.

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BOOK REVIEWS

Logic for Use. F. C. S. SCHILLER. New York: Harcourt, Brace & Company. 1930. Pp. viii + 469.

Surrendering his old term "humanism" in favor of "voluntarism," thus to mark more sharply the contrast to intellectualistic logics, F. C. S. Schiller announces his *Logic for Use* as a constructive sequel to its destructive predecessor, *Formal Logic.* In the new work, the author would abandon "academic controverting" for "the luxury of straightforward exposition." But the controversial habit is so strong! It is in this new book with the same verve and wit which make Schiller's criticisms so readable, although here it rather hampers the readers' effort to focus on the announced exposition.

Voluntarist logic, a logic of discovery, which must lead to novelty, not only relative to premises, but relative to all knowledge, the author says "openly rests on personal meaning, purposive thought, freedom of choice between alternatives, desires, postulates and interests, hazardous selections, probable reasoning, and unending verification" (pp. 440–441).

Along with ethics and esthetics, it is a normative science, with evaluation its *raison d'être,* its particular concern being with "cognitive values," i.e., true and false determinations in solving any situational problem (pp. 34 and 98). Its "worthiest and most proper, though rarest use is reflection on actual thinking" (not on metaphysics and grammar). Consequently its divorce from psychology is "unthinkable." Logicians who seek this divorce are pronounced too lazy to distinguish between what a proposition meant to its maker, means to its hearers, and may mean to posterity (p. 24); they merely want to idle with "meaningless propositions," a sport which Schiller says was devised before there were chess and bridge to kill time. Psychologists, however, are charged with failure to undertake the description of thinking in its *purposive* sense (p. 33) and therefore logic will have to work out its own psychology.

With this valuing and psychologizing, there will be critics who will say that in leaving the nest of "meaningless" certainties, which is formal logic, and which Schiller calls "Cloud Cuckootown," logic more than ever goes cuckoo in voluntaristically usurping the nests of ethics, esthetics, and psychology for hatching out its novelties. Be that as it may, Schiller's *Logic for Use* becomes "a fascinating and progressive study of the *values* which are *created* by adventurous truth-seekers in the achievement of their purpose" (p. 48).

Perhaps the best way to do the author justice is to summarize what he seems to offer for constructive method and to present his more apparent metaphysical assertions, for these two aspects will

probably do more than anything else to make friends or enemies for his present summation of his life-long crusade against logic, waged, nevertheless, in the name of logic!

As to method, Schiller makes a clean sweep of all old logics; "Induction is not formal proof—'system' means rotation in a circle —the search for premises means retrogression instead of progress— and 'intuition' is unabashed assertion" (p. 330. Each point is ably amplified).

The ideal of voluntarist logic is not to *prove,* but to *improve* knowledge. Its raw materials are truth-claims and value-claims, i.e., any thought experiments, which, like Russell's propositional functions, are neither true nor false in themselves, but which turn into true and false propositions when made specific by *selected* meanings in a particular problem. In this logic, lack of meaning to make a proposition empirically true is deemed a far graver danger than self-contradiction (pp. 17 and 74).

Emphasis is persistently laid on *selection.* Voluntarist logic is concerned only with *relevant* parts of a whole, never with an absolute *per se.* It deals with sumpta, not data; logic starts with the "taken," i.e., the taken-to-fit-the-situation and not the "given."[1] A conclusion, so far from being bound by the original sumpta, is really tested by "the advance made after *leaving* the starting point" (p. 386). Such is declared to be the scientific method, and "the application of Scientific Method is universal" (p. 386), though the author hedges a little in a footnote saying that in practical, moral affairs "it may sometimes be undesirable to allow full liberty of experimenting to all and sundry on all occasions." Experimentation in the sense of venturing to act on a probability which has been formulated from the suggestions of past experience as applied to present *sumpta,* is always a double-edged tool, with alternative hypotheses which might have been chosen. Ergo, selective methods are inevitably risky.

The voluntaristic logician must have the spirit of adventure rather than a craving for security (p. 83). Scientific facts are never absolute (p. 365) and the data of knowledge are never really depersonalized (p. 374). "Every judgment is a personal *act,* by which its maker commits himself and assumes a responsibility he can not disavow" (p. 202). Thus risks begin every time we stop to think. Such judgments are vehicles for the growth of knowledge and the evolution of reality (p. 206). Schiller discusses in detail (pp. 445–449) this "making of reality" which starts subjectively with a personal real, comprised of the thinker's sumpta in the immediate situation, and which emerges as a new reality with a new bearing

[1] *Cf.* Dewey, *The Quest for Certainty,* p. 178.

"on the maker, the situation and the terms by which it was apprehended" (p. 205). In other words, it develops into a new value, for Schiller identifies reality and value.

Judgment for Schiller, who grants it is the central theme of logic, is a primary act, " a characteristic human attitude which can not be resolved into any other" (p. 218). It is subsidiary to perception and functions only in difficulties affording time to think. In general, Schiller's analysis of thinking is analogous to the first four of Dewey's steps of a complete act of thought, but not to the fifth, for Schiller does not identify thinking and final action. "Sooner or later," Schiller says, "the time comes in every situation when thinking has to stop and action, modified, enriched, improved by thought has to follow" (p. 201). This voluntaristic transition from thought to action is the judgment. No judgment is eternally true, but it is true enough for the purposes of human knowing if it is true in its context, as an adequate response to the situation out of which it arises and with which it is meant to deal (p. 239). In fact, "there would be nothing wrong or intellectually contemptible in never using any but 'particular' judgments at all" (p. 243).

Logical inference, it seems, should be the chief psychological instrument of the will to power (p. 246). Inference occurs whenever a judgment fails to lead directly to action, i.e., when, lacking self-evident value, it needs support either retrogressively by a retreat to substantiating premises—or progressively, by advancing to consequences which will confirm the original judgment. It may also occur when a judgment is so successful that it tempts us to pursue the subject (p. 248). In either case the goodness of the inference is psychologically evaluated, for a better inference may have been "better born" in a better mind, and it may better stand experimental tests. The amount of verification needed depends on the degree of antecedent improbability, the importance of accuracy, and how credulous or critical are those concerned with it. Inasmuch as Schiller sees no way for a Logic for Use to transcend the limits of personality, "there is no one definite point at which verification merges into proof for all minds" (p. 351). Verification is unending and probability replaces validity.

The syllogism thus becomes "a form in which thought-experiment is conducted, and its conclusion serves merely to guide expectation" (p. 291). As to error "it is far more important to develop a *technique* for detecting and correcting errors, than a paralyzing anxiety to avoid them, or than to deceive oneself with delusive promises of infallibility" (p. 187).

Thus a voluntarist logic begins with a study of valuing and of the knowing process with all their roots and ramifications in human

personality. It is empirical (not *a priori*), it is attractive (not coercive), it is selective (and there is through Schiller's whole reasoning an assumption of Darwinian natural-selection to determine the continuance or elimination of any logico-psychological value), it is risky (attaining only the probability sufficient for action), it is valuable (not valid). Its rôle is to advise, not dictate to all knowers. Such a logical method, Schiller maintains, already exists in fact and common use.

Metaphysically, comment must be cautious, for the writer denounces the old allegiances of logic and metaphysics. Old, objective essence gives way to usable essence, which is "whatever aspect of a thing is most important for the purpose in hand," hence pluralistic, subjective, debatable, and relative (p. 21).

The absolute is decried as a "rag-bag" of all things—"it is nothing but the locus and meeting place of all contradictions" (p. 85). Relevance, therefore, should replace it as the determinant of intelligence.

The only universal law in the realm of values is divergence of tastes. Agreement is an achievement, not a presupposition (p. 100). "Values always hunt in couples and imply a tacit reference to their opposites"—they are basically just psychic facts. The value of objects "is a reaction which they provoke and a relation to us which we confer on them" (p. 104).

Seven old theories of truth are abolished *ad seriatum,* with a kindly word for only two. Correspondence with reality may be acceptable if it is perceptual and purposive correspondence and does not involve transcendence and independence. Independent truth may also be condoned if taken in the sense of truth which does not *remain* tied to the particular judgments and acts which generated it (p. 136). Humanistic truth, on the other hand, is born out of psychological interest in pursuit of some purpose. All truth must be useful, but Schiller emphasizes that this proposition converts only *per accidens,* and one may not justifiably say "anything useful is true" (p. 159). Eternal truths are those which are put out of relation to time by abstraction, and abstraction is only selection which may be valued as an idealization or a mere fiction according to taste (p. 407).

Novelty and progress are more vital to reasoning than proof and assurance (p. 322). Absolute truth is, at this point, recognized as a possible ideal towards which knowledge moves. Schiller substitutes the lure of infinite progress for the bugaboo of infinite regress.

The Will to Believe is resolved into the Right to Postulate (p. 339) and this, psychologically, issues from its maker's total personality. Thence to what Schiller reiterates from his *Studies in*

Humanism is complete relativity *à la* Protagoras, with man the measure of all things (though I do not see how relativity can be complete with man himself not relative to anything).

All of this sums up into what Schiller calls common-sense realism, which "believes that the world is composed of a plurality of things (substances, substantives) and persons (subjects, pronouns), existing in their own right and having *qualities* (adjectives) and *relations* with each other, acting and being acted upon (verbs, active, passive, intransitive, etc.) according to causal and teleological laws (which are developed out of our experience of compulsion and willing)" (p. 388).

Thus stands his sequel to his previous works, still controversial and in some places unduly repetitive, but withal vigorous and rich in suggestion.

When one is thus confronted with a Darwinized logic, rooted in a theory of natural selection, and trusted to eliminate the unfit in the course of experience, it is tempting to wonder if we have not in our midst a new type of being—the bio-logician—who, like the biochemist, has a dual rôle which present conditions may actually necessitate. The slogan of such a movement stands out—"Let experience be your guide" and, it must be added, "not blind, but self-conscious experience."

The plaint persists, however, this offers no criterion, no absolute guide. Selection, yes, but selection according to what? Does not, however, the situation which produces such logics and philosophies also afford their criterion at least as long as the situation which generates them shall last? Schiller is avowedly willing to submit his own theories to continuous verification or revision as the situation changes (footnote p. 338). He recognizes that "frequency of revaluation marks the progressiveness of a subject of inquiry" (p. 48).

The significant point is that these philosophies of selection have developed in an era of plenty-to-select. In human experience to which a bio-logician must be devoted there are at present self-evident ends instead of self-evident premises. Not all ends are self-evident, but the challenge which has brought forth these selective contenders for leadership are those evident ends of properly distributed joys-here-and-now;—or in Cartesian terminology, the "clear and distinct" ends of safeguarded health, economic security, and increasing opportunities for human excellence in any line. Such may be the significance of these philosophers who are now seeking to launch a new modernism in a bio-logic of opportunity as much in keeping with these times, as was the mathematico-rationalist

struggle for certainty in keeping with the times which launched the old modernism of 1650 to 1900.

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L'Idée de Bonté Naturelle chez J.-J. Rousseau. S. MOREAU-RENDU. Paris: Marcel Rivière. 1929. Pp. 337.

The author's aim is to determine which is correct: Rousseau's fundamental idea that man is naturally good, or the Catholic and traditional view which "evaluates human nature without deifying it" and knows how to find "in its repentance and avowed weakness a source of beauty." The author's conclusion is that Rousseau's "foolish belief in natural goodness, a theory not supported by facts, has succeeded only in disorganizing thought, enervating pedagogy, disturbing the social edifice, obscuring faith, in short, in compromising in all domains the fruits of long centuries of civilization." This conclusion is reached only after a very painstaking and detailed presentation, first, of the influences on Rousseau's mental development, which gave him the idea that "a world of chimeras is the only one worth inhabiting," second, of the substance of his various writings in which "the thesis of natural goodness is presented together with its logical consequences of a return to nature, an individualistic religion, a contempt for society and for all authority in general, and a negative education"—although careful note is taken of Rousseau's *De l'économie politique* in which his fundamental idea does not appear—and, third, a critical evaluation of his work. The fourth part of the book is a concisely stated conclusion of the treatise.

In critically evaluating Rousseau's thought, M. Moreau-Rendu shows that the theory of natural goodness results from "an extraordinary confusion" of a metaphysical concept, the concept of a primitive state, and the concept of "the individuality of each man, who finds himself in a restored state of nature." Moreover, the author cites confirmation of the doctrine of original sin in philosophy, traditions, legends, poetry, and the religions of all peoples, and he does not understand Rousseau's blindness to "the unconscious avowal of the centuries and our own homesickness for a lost paradise." Furthermore, the author clearly shows weaknesses in the logic of Rousseau's thought. Though Rousseau rejects the doctrine of original sin, he does not account for the presence of evil in a society of men by nature good. Also, in his *Deuxième discours,* based on an event of capital importance in his life, Rousseau indicates that primitive man is neither good nor evil, that men are evil as sad ex-

perience proves, and yet concludes that he has demonstrated man's natural goodness. Again, Rousseau confesses in various writings that the "man of nature" is only an hypothesis—though he sometimes identifies himself with the "man of nature"—and the "state of nature" is no more realizable than the golden age. However, M. Moreau-Rendu points out, quite justly, that there are fragments of truth in Rousseau's writings. But, for the most part, the author regards as evil "the profound and incalculable consequences of the movement which Rousseau has created." These M. Moreau-Rendu indicates in detail.

One finishes the book with a renewed conviction that there are two points that should not be overlooked in any evaluation of Rousseau. In the first place, as the author makes clear, Rousseau was a child of his time, for optimism concerning human nature was in the air. Otherwise, we feel sure, even his "bewitching language" could not have made his ideas prevail. Secondly, his public should have read his works more carefully, or not at all; then they could have seen the weaknesses of his view revealed in his inconsistencies—admitted by Rousseau—and in his failure adequately to establish the plausibility of that view. Rousseau's own works are the best *critique* of his fundamental idea.

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NOTES AND NEWS

We reprint the following from the *Cornell Alumni News* of May 29, 1930:

"Dean William Alexander Hammond will retire at the close of the present college year, completing thirty-nine years of service to the University.

"His colleagues and graduate students in the Sage School of Philosophy were hosts to him May 17 at a dinner in Willard Straight Hall.

"Dean Hammond came to Cornell in 1891 as an instructor in Greek philosophy. A year later he was appointed assistant professor of ancient and medieval philosophy. In 1903 he was named assistant professor of ancient and medieval philosophy and aesthetics. Since 1908 Dean Hammond has been Sage Professor of Ancient Philosophy and of Aesthetics. He was appointed dean of the University Faculty in 1920. He had formerly served, in 1903, as secretary of the Faculty.

"He studied at Harvard where he took his A.B. degree in 1885. The M.A. degree was conferred on him by King's College, Canada, in 1887. For three years he was a lecturer there on the classics. He went abroad to study at the University of Leipsic, where he was granted the Ph.D. degree in 1891. In 1907–08 he was special lecturer in philosophy at the University of Pennsylvania.

"Dean Hammond is co-editor of *The Philosophical Review* and is a member of the American Philosophical Association, the American Council of Learned Societies, and Kappa Alpha. He is the author, with the late Professor Charles E. Bennett, of *The Characters of Theophrastus,* published in 1902, and of *Aristotle's Psychology,* 1902. He has also contributed to the *Harvard Classical Studies* and other journals.

"At a dinner given in his honor Professor Frank Thilly was toastmaster, and the principal speaker was Professor Emeritus George L. Burr, '81, who recalled the organization of the Sage School

of Philosophy by President Schurman in 1891. Dean Hammond recalled the history of the School and pointed to the prominence of its graduates in the field of philosophy.

"Commenting on Dean Hammond's forthcoming retirement, *The Sun* said editorially:

" 'With the close of the present semester, Dean William A. Hammond will have brought to a close a long and distinguished period of active service to the University.

" 'There is no need of going into a detailed account of Dean Hammond's record as scholar and teacher. He is too well known for that. Suffice it to say that few men have gone farther in their field than has the present Dean of the University Faculty.

" 'Men who are so keenly interested in life, so vitally concerned with things about them, so alive to the interests of students and faculty members, are indeed rare. No longer an active member of the Faculty, the dean will always be loved, esteemed, and admired by those who know him.' "

The three divisions of the American Philosophical Association will meet at the University of California, Berkeley, California, December 29–31, 1930. At this joint meeting, the third series of lectures on the Carus Foundation will be given, by Professor George H. Mead. In addition to the Carus lectures, the presidential addresses will be given, and there will be sessions for the reading and discussion of papers presented by members of the Association. Members wishing to offer papers are requested to send an abstract or brief outline to Professor W. R. Dennes, Department of Philosophy, University of California, before the first of November.

Enquiries concerning railroad rates and rooms should also be sent to Professor Dennes.